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Policy Memorandum

Subject: Approved systems for ethanol blended motor fuel storage and dispensing

Motor fuel costs and competitive product pricing has resulted in motor fuel providers moving to ethanol blended motor fuels (EBMF) with greater than 10% ethanol. The interest and move to higher ethanol blended motor fuels has progressed faster than the current Comm 10 code and key national standards have progressed in their development to address ethanol compatible design standards and technology.

Conversion of existing storage and dispensing systems to ethanol blended fuels requires evaluation and modifications of conventional storage/dispensing systems to maintain equipment material compatibility with the ethanol and overall product quality. Ethanol, both as a pure product and blended with gasoline, introduces different compatibility problems for tank, piping and dispenser components than gasoline blended with 10% or less ethanol. Concerns associated with storing ethanol and ethanol blended motor fuels can be summarized into the following five categories:

1. Lack of compatibility with storage system components resulting in leaks and releases.
2. Phase separation, causing ethanol to preferentially dissolve in water. This can create water-related problems in storage systems and automobile engines.
3. Ethanol is a solvent and detergent that may loosen rust and other residue from the interior walls of both steel and non metal components of storage systems. When this occurs, the wear of various storage system components may be accelerated due to the scouring of internal surfaces with suspended particles.
4. The electrical conductivity of ethanol and EBMF may lead to corrosion of various metal components and present a potential safety threat during vehicle fueling.
5. Impurities resulting from ethanol scouring and material degradation pose a high risk of reducing motor fuel quality, consequently impacting the fuel injection and carburetor systems of combustion engines.

More detailed compatibility concerns and information is provided in the program letter titled: Ethanol Motor Fuel Storage Overview available on the Commerce web site at: http://commerce.wi.gov/ERpdf/bst/ProgramLetters_PL/ER-BST-PL-EthanolOverview.pdf.

The regulatory considerations, positions and authority in this policy memorandum are based upon the current standards, rule and statutes referenced below. Commerce recognizes EBMF authorized by Federal EPA regulations for motor fuels, which at the present time is E85.

- NFPA 30-2.2.2 requires that tanks and appurtenances be compatible with the product stored.
- NFPA 30A-6.3.2 require that suction dispensing devices be listed.
- NFPA 30A-6.3.2 requires dispensing devices for Class I liquids shall be listed.
- NFPA 30A-6.4 requires remote and submersible pumps be listed.
- NFPA 30A-6.5.1 requires hose assemblies to be listed.
- NFPA 30A-6.6.1 requires nozzles to be listed.
- Comm 10.125 requires leak detection to have product specific material approval

- Statute. 101.02 (15), protect the life, health, safety and welfare of every employee and frequenter in a place of employment and the safety of the public or tenants in a public building.
- Statute s. 101.09, protect the waters of the state from contamination by liquids stored in tanks.

The following policy is implemented immediately for pending conversions and retroactively for systems already converted for EBMF:

1. The storage system must be assessed for ethanol compatibility and documented on the ERS-9 Ethanol Conversion form. Steel tanks and pipe do not have to be listed for use with ethanol. Other tank and pipe construction material must have the listing or manufacturer's verification showing extended compatibility consistent with the product being stored.
2. A statement and justification provided by the contractor or professional engineer that the potential for a release is minimal in situations where complete compatibility has not been determined. An example of minimal release potential is where the piping is within secondary containment
3. Part I of the ERS – 9 Ethanol Conversion form must be submitted to the department with a $22 application fee. Existing dispensers for EBMF use must have the ERS-E85 form submitted to the department with the exception of those dispensers identified on a plan submittal as being used for ethanol motor fuels.
4. Dispensers and submersible pumps that are not listed or verified compatible for EBMF use must have a containment sump with a product sensing device having Commerce Material Approval that alarms if the dispenser or submersible pump experiences a leak. Systems currently used for EBMF must have containment and sensors installed no later than December 31, 2005 or are discontinued for EBMF service.
5. The operator must complete Part II of the ERS-9 Ethanol Conversion form prior to dispensing EBMF to the public.

Ethanol blended motor fuels (EBMF) are defined as motor fuels blended with greater than 10% ethanol and can not be labeled or sold as "gasoline."

This policy is an interim transitional policy to address life safety and environmental concerns associated with motor fuel storage and dispensing systems until the respective listings and national standards are developed and adopted. Compliance with national standards may dictate future modifications to EBMF systems operating under this policy.

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